Unit title	Unit 13: Software Testing
Guided learning hours	60
Number of lessons	30
Duration of lessons	2 hours

Key to learning opportunities			
IA	Internal assessment	**RS**	Revision session
GS	Guest speaker	**V**	Visit
IS	Independent study	**C**	Classroom activities directed by teacher

Lesson	Topic	Lesson type	Suggested activities	Resources
Learning aim A: Understand the software development and testing methodologies commonly used during the development life cycle to quality assure software				
1	**A1 User requirements and typical software project job roles**	IS C	• **Lead-in:** Introduce learners to the unit content and relevance to potential future work roles. Give learners an overview of the assessments. • **Tutor-led discussion:** Facilitate a brainstorming session on user requirements and typical job roles in a software development team. **Tutor presentation:** Talk about what day-to-day tasks are involved in typical job roles. • **Paired/small-group activity:** Learners should research a typical day in the life of a software developer team member. They should retain notes and research for future use. • **Plenary:** Learners should share their findings from the activity and receive feedback from their peers. Summarise the lesson and use Q&A to establish learners' understanding.	• Dry wipe board for brainstorming session.

Lesson	Topic	Lesson type	Suggested activities	Resources
2-3	**A2 Characteristics of common software testing methodologies**	IS C	• **Tutor presentation:** Explain the different types, application and output of different software testing methodologies as outlined in the unit content. • **Paired/small-group activity:** Provide learners with suitable case studies that have sufficient scope, documentation and sample code. Learners need to apply each type of testing methodology to the case studies. • **Plenary:** Learners should share their findings from the activity and receive feedback from their peers. Summarise the lesson and use Q&A to establish learners' understanding.	• Computers with internet connection, for research. • Case studies for learner activity.
4-5	**A3 Features of testing for different software development methodologies**	IS C	• **Lead-in:** Initiate a discussion about the different software development methodologies. • **Tutor presentation:** Explain the different software methodologies and how testing is applied to them. • **Independent learning activity:** Learners should create a poster, podcast or wiki that provides a basic comparative overview of each software development methodology discussed.	• Computers with internet connection, for research.

Lesson	Topic	Lesson type	Suggested activities	Resources
			• **Independent learning activity**: Learners will examine several different businesses and software development needs and ask them to select an appropriate software development methodology, justifying their selections to their peers. • **Plenary:** Summarise the lesson and use Q&A to establish learners' understanding.	
6-8	**Assignment 1 Learning aim A**	AW	• **Assignment writing:** learners should work independently on Assignment 1 (further work will be needed on this outside of the classroom).	Assignment 1.
Learning aim B: Carry out a range of testing methodologies on a software product to meet a client's needs				
9-11	**B1 Common tools and processes used in software testing**	IS C	• **Lead-in:** Explain the practical side of this learning aim. • **Tutor presentation:** Detail and demonstrate the common tools and processes used in software testing. • **Paired/small-group practical activity:** Learners should start work on carrying out software testing using common tools, for example text based and automation tools.	• Computers with internet. • Software testing tools.

Lesson	Topic	Lesson type	Suggested activities	Resources
			• **Tutor presentation:** Detail the testing process used in software testing, quality assurance, change requests and code debugging. • **Plenary:** Use Q & A to review the common tools and processes.	
12-14	**B2 Selecting appropriate test methodologies**	IS C	• **Tutor presentation:** Introduce the different test methodologies. **Paired/small-group practical activity:** Learners should use an open-source suite or tool to test different software applications. They need to make notes about its features and characteristics. • **Plenary:** Share feedback on the activity and review topic area with Q & A.	• Computers for practical tasks. • Testing methodology.
15	**B3 Test plan**	IS C	• **Lead-in:** Introduce the topic area. • **Tutor presentation:** Introduce the correct contents of a test plan, including the selection of the test methodologies most suitable for a given software project and the creation and documentation of suitable test scripts. • **Paired/small-group practical activity:** Learners should create a suitable series of test scripts for a	• Computers for practical tasks.

Lesson	Topic	Lesson type	Suggested activities	Resources
			sample software project, identifying typical areas to test and completing the appropriate details for each. • **Plenary:** Share feedback on the activity. Use Q&A to establish learners' understanding of test plans.	
16-17	**B4 Product Testing**	IS C	• **Lead-in:** Introduce the topic area. • **Tutor presentation:** Discuss the concept of product testing, in particular acceptance testing and regression testing. • **Paired/small-group practical activity:** Learners should role-play elements of acceptance testing with sample products. Learners can play the role of project clients and testers. • **Individual activity:** Learners can practice regression testing using a sample software development project. • **Plenary:** Share feedback on the activity. Use Q&A to establish learners' understanding of test plans.	Computers for practical tasks.
18-22	**Assignment 2 Learning aim B**	IA	• **Assignment writing:** learners should work independently on Assignment 2 (further work will be needed on this outside of the classroom).	• Assignment 2.

Lesson	Topic	Lesson type	Suggested activities	Resources
Learning aim C: Review and present the results from software tests to meet a client's needs and suggest improvements				
23-24	**C1 Test evaluation and presentation of results**	IS C	• **Lead-in:** Facilitate a discussion about reviewing and presenting the results from software tests. • **Tutor presentation:** Discuss the items that would be expected in the test evaluation and presentation of results, for example a summary of tests passed/failed, undocumented bugs and presenting effectively. • **Paired/small-group practical activity:** Learners should be given good and bad examples of testing evaluations, then asked to differentiate them and justify their choices. • **Individual activity:** Provide learners with a detailed written extract and get them to replace this with a visual representation of the data to demonstrate how to present quantitative data. • **Plenary:** Summarise the lesson and use Q&A to establish learners' understanding of the IT systems diagrams and how they can be interpreted.	• Computers with internet connection, for research. • Good and bad examples of testing evaluations.

Lesson	Topic	Lesson type	Suggested activities	Resources
25-26	**C2 Test plan improvements**	IS C	• **Tutor-led discussion:** Discuss test plan improvements and detail the possible resulting jobs. • **Independent learning activity:** Learners should be given a suitable software development case study/project. They should be encouraged to demonstrate how undocumented bugs will generate new test cases that need to be resolved, add new test cases to the test suite based on the newly undocumented bugs and explain how testing feedback should be fed back to the development team. • **Paired/small-group activity**: Review the case study test results from previous lessons to identify new test cases and add them to the test suite. • **Plenary:** Summarise the lesson and use Q&A to establish learners' understanding.	• Computers with internet connection, for research. • Software development case study/project.
27-30	**Assignment 3 Learning aim C**	IA	• **Assignment writing:** learners should work independently on Assignment 3 (further work will be needed on this outside of the classroom).	• Assignment 3.